



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,105	12/03/2003	Kanad Ghose	RB-160	4405

41245 7590 09/06/2006

MARK LEVY & ASSOCIATES, PLLC  
PRESS BUILDING, SUITE 902  
19 CHENANGO STREET  
BINGHAMTON, NY 13901

EXAMINER
----------

BUTLER, DENNIS

ART UNIT	PAPER NUMBER
----------	--------------

2115

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/727,105

Applicant(s)

GHOSE ET AL.

Examiner

Dennis M. Butler

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-14 is/are rejected.
- 7) ☒ Claim(s) 4-6, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

Art Unit: 2115

1. This action is in response to the application filed on December 3, 2003. Claims 1-16 are pending.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 is indefinite as to whether it is complete because it does not end in a period.

Regarding claim 14, the phrases "said statistical analysis" and "said need" lack proper antecedent basis.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent; except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 2-3, 7, 9 and 11-13 are rejected under 35 U.S.C. 102(a) as being anticipated by Buyuktosunoglu et al., U. S. Patent Application Publication 2002/0053038.

Per claim 1:

A) Buyuktosunoglu et al teach the following claimed items:

1. providing at least one datapath resource whose size may be dynamically altered with the issue queue of figure 2 and at paragraphs 20, 21, 69 and 71;
2. dynamically estimating a size requirement for the resource with figure 6 and at paragraph 21;
3. dynamically altering the size of the resource with figure 6, and at paragraphs 21, 26 and 27;
4. reducing power consumption from an unused portion of the resource with figure 7 and at paragraphs 21 and 26.

Per claims 2-3, 7, 9, and 11-13:

Buyuktosunoglu describes that the resource comprises discrete resource units (8 bit chunks) at paragraphs 71, 79 and 102. Buyuktosunoglu describes allocating and deallocating the discrete resource units during and/or at the end of an update period (cycle window) and then starting a new update period at paragraphs 21, 26 and 79. Buyuktosunoglu describes that the datapath resource is an IQ with the issue queue of figure 2 and at paragraphs 20, 21, 69 and 71.

Buyuktosunoglu describes statistical analysis of the need for the datapath resource with figure 4 and at paragraphs 80 and 83.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buyuktosunoglu et al., U. S. Patent Application Publication 2002/0053038 in view of applicant's admitted prior art.

Per claim 8:

Buyuktosunoglu teaches the elements and steps of claim 1 as described in the above rejection. The claims differ from Buyuktosunoglu in that Buyuktosunoglu fails to explicitly teach that the datapath resource comprises resource used as a FIFO queue as claimed. However, Buyuktosunoglu describes that the datapath resource comprises an issue queue and further describes that the concept is equally applicable to other computer architecture models such as load-store and reorder buffers, branch prediction tables, cache and TLB memory structures at paragraph 20. In addition, applicant describes that a reorder buffer (ROB) behaves as a FIFO queue at page 3, lines 7-9. It would have been

Art Unit: 2115

obvious to one having ordinary skill in the art at the time the invention was made to provide a datapath resource comprising a reorder buffer that is used as a FIFO queue in order to reorder program instructions in the proper sequence. One of ordinary skill in the art would have been motivated to combine Buyuktosunoglu and applicant's admitted prior art because of Buyuktosunoglu's suggestion that his invention applies to a reorder buffer at paragraph 20.

9. Claims 4-6, 15 and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis M. Butler whose telephone number is 571-272-3663. The examiner can normally be reached M-F from 9:00-5:30. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/727,105  
Art Unit: 2115

Page 6

*Dennis M. Butler*  
Dennis M. Butler  
Primary Examiner  
Art Unit 2115